

1 1. A polypeptide consisting of
2 a first amino acid sequence that is identical to (1) amino acids 1-104 of a naturally
3 occurring hepatitis virus pre-S protein or (2) a fragment of amino acids 1-104 of the pre-S
4 protein, provided that the fragment includes at least amino acids 80-102 of the pre-S
5 protein; and
6 one or more amino acid sequences that are not identical to the pre-S protein.

1 2. The polypeptide of claim 1, wherein the first amino acid sequence is selected
2 from the group consisting of amino acids 1-102, 25-102, 59-102, 80-102, 80-104, 1-104,
3 25-104, 42-102, and 59-104 of SEQ ID NO:34.

1 3. The polypeptide of claim 2, wherein the first amino acid sequence is selected
2 from the group consisting of amino acids 1-102, 25-102, 59-102, and 80-102 of SEQ ID
3 NO:34.

1 4. The polypeptide of claim 2, wherein the first amino acid sequence is amino
2 acids 80-102 or 80-104 of SEQ ID NO:34.

1 5. The polypeptide of claim 1, wherein the one or more amino acid sequences
2 include the amino acid sequence of a glutathione S-transferase.

1 6. A polypeptide consisting of
2 a first amino acid sequence that is identical to (1) amino acids 25-161 of a
3 naturally occurring hepatitis virus pre-S protein or (2) a fragment of amino acids 25-161
4 of the pre-S protein, provided that the fragment includes at least amino acids 98-161 of
5 the pre-S protein; and
6 one or more amino acid sequences that are not identical to the pre-S protein.

1 7. The polypeptide of claim 6, wherein the first amino acid sequence is selected
2 from the group consisting of amino acids 92-161, 98-161, 87-161, 26-161, 59-161,
3 71-161, and 80-161 of SEQ ID NO:34.

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1 8. The polypeptide of ~~claim 7~~, wherein the first amino acid sequence is amino
2 acids 92-161 or 98-161 of SEQ ID NO:34.

1 9. The polypeptide of claim 6, wherein the one or more amino acid sequences
2 include the amino acid sequence of a glutathione S-transferase.